

Development of Sediment
Quality Objectives for the Delta and other
Estuaries
Interested Parties/Stakeholder Meeting

Cal/EPA State Water Resources Control Board
Coastal Hearing Room
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Meeting Objectives

- Present Program Summary
- Describe the technical and policy related goals and objectives
- Present overview of Phase I and Phase II SQO project.
- Solicit Participation on Advisory Committee
- Select Advisory Committee members
- Schedule Next Meeting

Background

Development of SQOs

- EPA has been working on sediment criteria for over twenty years
- Other agencies (NOAA, Florida, Wisconsin) developing guidelines and assessment policies (not standards)
- Washington State adopted sediment quality standards
 - Only for Puget Sound
- A very complex, highly contentious, resources intensive effort

Background - continued

- Sediment Quality is very unique
 - Cannot use the water quality paradigm
- Multiple disciplines
 - Chemistry
 - Toxicology
 - Ecology
 - Risk Assessment
- Bioavailability – Unlike water quality cannot use pollutant concentrations alone to assess sediment quality
- Bioaccumulation – sources, trophic structure, foraging habits, linkage to specific sediments

Background - Continued

- Exposure Types
 - Direct Exposure: benthic organisms directly exposed
 - Indirect Exposure: birds, mammals exposed through consumption of prey (bioaccumulative contaminants)
- Current tools and methods of assessment imperfect
 - Requires use of multiple lines of evidence
 - Method to integrate the MLOE

Why is the Water Board developing SQOs

- In 1989, the Water Code was amended to require the SWRCB to develop SQOs
- Only limited progress was made
- In 1999 Lawsuit was filed for failure to adopt SQOs (Baykeeper/Deltakeeper)
- In 2002 Court mandated the SWRCB develop SQOs within a relatively tight time frame.....
 - Adopt workplan by June 2003
 - Circulate draft objectives and policy by August 2005*
 - Submit final adopted policy and administrative record to OAL by February 2007*

Program Goals

- Develop scientifically defensible SQOs that are protective of beneficial uses.
- Develop policy that is fair and provides for consistent application throughout the state.
- Develop robust methods and tools for assessing sediment quality as part of implementation policy
- Minimize reliance on best professional judgment

Approach

- Must utilize multiple lines of evidence to assess condition or risk associated with each beneficial use.
 - Single line of evidence not supportable (tools imperfect)
 - Multiple Lines of evidence approach supported by EPA, NOAA and many state agencies for sediment quality assessment
- Limit effort to modification/refinement of existing tools and methodologies.....

Why are we here?

- In 2003 the State Water Board initiated development of SQOs
- This program focused on embayments because:
 - Data available to develop robust and defensible tools and thresholds
 - Understanding of aquatic communities
 - Bays differ from Estuaries
 - Bioavailability
 - Biological communities
 - Land/water uses

Why are we here -continued

- In September 2005, State Water Board provided additional funding for Phase II Effort
 - Budget includes a sampling component
 - One hundred stations within the Delta alone.
 - Field effort slated for 2007
 - Fully supported SQOs by 2010/2011 (Phase II)
- The need for short term method to assess sediment quality in Delta and other estuaries for Phase I

Phase I and Phase II

- Phase I Protection of Benthos only
 - Embayments: Based on sediment toxicity, sediment chemistry and benthic community measures
 - Estuaries: Based only on sediment chemistry and sediment toxicity
- Phase II Protection of Benthos
 - Estuaries: Three fully developed lines of evidence
- Phase II Protection from Indirect Effects
 - Embayments and Estuaries: Tools and approach to assess dietary exposure to human and wildlife

Proposed Schedule

- Phase I
 - August 2006 - Circulate draft FED
 - February 2008 - Submit final adopted policy to Office of Administrative Law.
- Phase II
 - Requires Data Collection
 - June 2006 – Workplan
 - December 2010 – Circulate draft FED

Phase I Proposal

- Focus on direct effects narrative objective: *Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities*
- Embayments
 - Full suite of tools, methods and thresholds to implement the narrative.
- Estuaries – including the Delta
 - An approach based upon fewer lines of evidence
 - Lower discriminatory power

Phase I Proposal - Continued

- Embayments
 - Benthic Narrative (direct effects) would be supported by:
 - Benthic invertebrate community measures and thresholds
 - Acute and sublethal sediment toxicity tests and thresholds
 - Sediment chemistry thresholds
- Estuaries – including the Delta
 - Benthic Narrative (direct effects) would be supported by:
 - Toxicity
 - Chemistry

Phase I Issues

- What Toxicity Tests methods should be used?
- What Thresholds are appropriate?
- What chemistry values should be used?
- How should the data be integrated?
- What are the limitations associated with these two specific lines of evidence?
- How do we incorporate this knowledge and uncertainty into a regulatory framework?

Phase II Issues

- Plan field study (station selection)
- Select methods and tools applied at each station
- Develop indicators tools and thresholds for Phase II Plan
- Develop draft policy of implementation containing
 - Full suite of tools and thresholds for both direct and indirect effects.

Advisory Committee

- Section 13394.6. of the California Water Code requires the SWRCB to establish an advisory committee to assist in the implementation of Bay Protection Program.
- Members shall be appointed by the SWRCB to represent:
 - Trade associations whose members are businesses that use the bay, estuaries, and coastal waters of the state as a resource in their business activities.
 - Dischargers
 - Environmental, public health, and wildlife conservation organizations.

Advisory Committee

- Participants represent a constituency
 - Link to constituents
 - Two way communication
- Primary mechanism for stakeholder involvement in policy development process
- Committee input part of information considered in SWRCB staff decisions

Advisory Committee –continued

- Short-term Schedule
 - Focus on the Phase I direct effects issues independently of Embayment Advisory Group
- Long-term Schedule
 - Integrate both embayment and estuaries groups
- Members of both groups can participate in all meetings.
- Meetings are open to public as well.

SQO Team

- Program Manager: Chris Beegan, State Water Board
- Principal Scientist: Steve Bay, Southern California Coastal Water Research Project
- Technical Team (Partial List): Dr. Steve Weisberg SCCWRP (Program Team), Dr. Mike Conner SFEI (Program Team), Dr. Bruce Thompson SFEI (Benthic Team), Dr. Jay Field NOAA (Chemistry Group), Mr. Ben Greenfield SFEI (Bioaccumulation Team), Dr. Doris Vidal SCCWRP (Toxicity Team), Dr. Kerry Ritter SCCWRP (Chemistry Group), Mr. Brian Anderson MPSL (Toxicity Group) Mr. Rusty Fairy MLML (Field/Method Development Team)
- Water Board: Sheila Vassey (OCC), Dominic Gregorio/Ocean Unit, Val Conner, Craig Wilson (DWQ)

Input and Outreach

- Regulatory and Resources Managers
 - Agency Coordination Committee: State and Federal Agency staff
 - Biological Technical Assistance Group (BTAG)
- Scientific Steering Committee
 - Dr. Peter Landrum
 - Mr. Ed Long
 - Dr. Bob Van Dolah
 - Dr. Todd Bridges
 - Dr. Rob Burgess

Input and Outreach

- Embayment Advisory Committee Members

- **Ports** Paul Johansen, Port of Los Angeles. Alt; Andy Jahn, Port of Oakland
- **POTWs:** Tom Grovhoug, Larry Walker Associates). Alt: Lisa Haney, LACSD
- **Municipal Stormwater:** Desi Alvarez, City of Downey. Alt Sandy Mathews, California Stormwater Quality Association
- **Industrial Stormwater:** Tim Piasky, BIASC. Alt Steve Arita, Western States Petroleum Association
- **Industrial Direct:** Susan Paulsen, Flowscience. Alt Craig Johns, California Resource Strategies
- **Federal Facilities:** Bart Chadwick USN .
- **Legacy Pollutants:** Paul Singarella, Latham & Watkins.
- Leo O'Brien SF - BayKeeper
- Bill Jennings - DeltaKeeper
- Ed Kimura - Sierra Club
- Gabrielle Sumner Environmental Health Coalition

Contact Information

- <http://www.swrcb.ca.gov/bptcp/sediment.html>
- <http://www.swrcb.ca.gov/index.html>. Water Board home page, sign up for email subscriptions, (button on lower right) subscribe to sediment quality.
- Chris Beegan cbeegan@waterboards.ca.gov or 916-341-5577
- Steve Bay steveb@sccwrp.org or 714-372-9204